

USSR

ARKAD'YEV, D. I., et al, Radiotekhnika i Elektronika, Vol 15,
No 3, 1970, pp 523-528

Abstract:

as well as a quarter-wave electro-optical gate. A diagram of the new type of laser is shown. It consists of a special prism for full internal reflection, the electro-optical crystal polarized by a Glan prism, the ruby with sapphire ends, and stopping plates. Curves for the device giving the output energy as a function of the delay in application of the voltage to the gate for the ruby and the neodymium glass are shown; there are also curves for the output energy as a function of the voltage applied to the gate and of the pumping energy. The authors express their gratitude to A. M. Prokhorov for his valuable comments on the article..

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Acc. Nr:

AP0046225

Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:

UR0077

A70-23173 # Use of a monopulse laser for photographing models in ballistic studies (Ispos'zovanie monoimpul'snogo opticheskogo kvantovogo generatora dlia fotografirovaniia modelei pri ballisticheskikh issledovaniiaakh). A. N. Berezkin, Iu. A. Dunaev, Yu. E. Kamach, E. N. Kozlovskii, and V. M. Ovchinnikov (Akademiia Nauk SSSR, Fiziko-Tekhnicheskii Institut, Leningrad, USSR). Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii, vol. 15, Jan.-Feb. 1970, p. 21-25. In Russian.

Study of the possibilities of employing lasers to illuminate moving objects during shadow photography. Diagrams of the experimental arrangement are presented, and a description is given of the laser employed in the experiment, the telescopic system used to shape the beam illuminating the moving body, and the system for synchronizing the illumination pulse with the moment of arrival of the object under investigation at a given point in the photography field. Photographs are presented in which the boundaries of the flying bodies, the shock waves, and inhomogeneities in the wake of a body can be clearly seen. The possibility of using a monopulse ruby laser as an illumination source when photographing moving models in aeroballistic studies is demonstrated.

A.B.K.

REEL/FRA
19781341

Acc. Nr:

AP0037015-

K

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal SSSR, 1970, Vol 56,
Nr 2, pp 254 - 260

ON RECRETORY ORIGIN OF PYLORIC PEPSINOGEN
AND AMYLASE

Korot'ko, G. F.; Kamakin, N. F.; Inamova, K. B.

Dept. of Normal Physiology, Kalinin's State Medical Institute, Andizhan

Increase of pepsinogen and amylase contents in the blood after excluding of the renal way of their excretion from the organism and clamping of the pancreatic ducts, was shown to intensify excretion of these enzymes through pyloric secretion and urine. Decreasing blood contents of the pepsinogen after gastrectomy and subtotal gastric resection entails lowering of the enzymes excretion by pyloric glands and kidneys. The data confirmed by high positive correlation coefficient between blood contents of the pepsinogen and amylase and their excretion by pyloric glands, indicate recretory origin of these enzymes (their major part anyway) in the pyloric secretion.

D. n.

1/1

REEL/FRA
19721951

2

USSR

UDC 621.791.75:037-52:62-419.4

TSYGAN, B. G., Engineer, "Pavlogradkhimmash" Works, ~~KAMAKIN, N. I.,~~
Engineer, SYCHEV, A. A., Engineer, LOBKOVSKAYA, R. M., Engineer,
All-Union Scientific Research, Planning and Technological In-
stitute of Chemical Machinery

"Effectiveness of Using Metal Additions in the Automatic Welding
of Two-Ply Steels"

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 72, pp 16-18

Abstract: Results are presented of an experimental investigation
to determine the optimum quantity and granulometric composition
of metal additions, select the most efficient separation of edges,
develop welding methods, and study their effects on the mechanical
properties and the corrosion resistance in automatic welding of
two-ply steel joints. The optimum quantity of metal additions
can be found from an empirical formula. On the basis of investi-
gations and industrial tests, automatic flux welding of two-ply
steel St.3+Kh18N10T (up to 32 mm thick) in two welding operations
using metallic crumb of cut wire was adopted. Bimetal joints
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TSYGAN, B. G., et al, Svarochnoye Proizvodstvo, No 3, Mar 72,
pp 16-18

welded according to the new technology are of high quality.
The use of metallic crumb in welding of bimetals increases the
welding output without lowering the quality of welds. 4 illustra-
tions, 2 tables, 5 bibliographic references

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USSR:

UDC 51.621.391

KAMALETDINOV, N. B.

"One Approach to the Analysis of the Structure of a System"

Tekhn. Kibernetika. Vyp. 7 [Engineering Cybernetics, No. 7 -- Collection of Works]
Kiev, 1970, pp 24-34 (Translated from Referativnyy Zhurnal Kibernetika, No. 4,
April, 1971, Abstract No. 4 V448).

Translation: Information and control systems and methods of analysis of the
structures of these systems are studied.

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USSR

UDC 613.263:633.491:631.547.1.04

SHILLINGER, Yu. I. and KAMAL'DINOVA, Z. M., Laboratory for the Hygienic Studies of Food Additives and Institute of Nutrition, Academy of Medical Sciences USSR, Moscow

"Possible Toxicity of Potatoes Irradiated by a Flux of Fast Electrons and by γ -Radiation to Retard Sprouting"

Moscow, Voprosy Pitaniya, No 6, Nov/Dec 73, pp 50-55

Abstract: Irradiating potatoes may result in the production of mutations in organisms that eat them. In order to test this hypothesis potatoes irradiated with a dose of 30 kilorads and 20 kilorads of fast electrons were fed to white rats and the results analyzed by a dominant lethal mutations method. A mutation index is calculated reflecting the presence of mutation of dominant traits. A general mortality rate is also calculated. An examination of a number of these indicators and others relative to the number, viability and genetic mutations indicated that in neither case could genetic damage be documented.

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1/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--THE EFFECT OF CULINARILY PRE TREATED, GAMMA RADIATED BEEF ON THE
ORGANISM OF ALBINO RATS -U-
AUTHOR--KAMALDINOVA, Z.M.
COUNTRY OF INFO--USSR
SOURCE--VOPROSY PITANIYA, 1970, NR 2, PP 73-77
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GAMMA IRRADIATION, FOOD IRRADIATION, DIET, WHITE RAT, PROTEIN
METABOLISM, LIPID METABOLISM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/1482 STEP NO--UR/0244/70/000/002/0073/0077
CIRC ACCESSION NO--AP0101568
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--19SEP70

2/2 028

CIRC ACCESSION NO--AP0101568

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EFFECT OF CULINARILY PRETREATED, 0.8 MRAD GAMMA RADIATED FROM A CO PRIME60 SOURCE BEEF ON THE ORGANISM OF 110 ALBINO RATS OF TWO GENERATIONS WAS STUDIED. THE ANIMALS RECEIVED WITH THE IRRADIATED MEAT 51PERCENT OF PROTEIN AND 57PERCENT OF FAT, WHICH COMPRISED 25.6PERCENT OF THE RATION'S CALORICITY. THE TEST LASTED FOR 12 AND 17 MONTHS. A COMPARATIVE STUDY OF THE GENERAL CONDITION AND INDIVIDUAL CHARACTERISTICS OF THE PROTEIN AND LIPID METABOLISM IN EXPERIMENTAL AND CONTROL ANIMALS GAVE GROUNDS FOR THE AUTHOR TO INFER THAT THIS PRODUCT CAUSED SOME UNDESIRABLE CHANGES IN THE COURSE OF METABOLIC PROCESS IN THE ORGANISM OF THE ANIMALS. BEEF, GAMMA RADIATED WITH A DOSE OF 0.8 MRAD CANNOT BE AT PRESENT RECOMMENDED FOR ALIMENTARY CONSUMPTION BY THE POPULATION.

UNCLASSIFIED

Alkaloids

UDC 547.94+543.42.

USSR

ISKANDAROV, S., KAMALIDDINOV, D. Dzh., YAGUDAYEV, M. R., and YUNUSOV, S. Yu.,
Order of the Red Banner Institute of Natural Products Chemistry, Acad. Sc.
UzSSR

"Derivatives and Stereochemistry of Matrin Alkaloids"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 2, 1971, pp 174-179

Abstract: α -Substituted derivatives of isomeric matrins were synthesized and studied by IR, NMR, mass spectroscopy and ORD. Scforidin dissolved in a mixture of SOCl_2 and SO_2Cl_2 was refluxed for 1 hr. The solvent was removed, the residue treated with a 5% ammonia solution, and extracted with ether and chloroform. Chromatography over silica gel gave dichlorosofoforidin, m.p. 128-130°, $[\alpha]_D = +19^\circ$. Analogously the dichloroleontin, m.p. 158-159° and dichloromatin were obtained. To prepare dichloroisosofoforidin, m.p. 152°, $[\alpha]_D = -114.8^\circ$ the above reaction had to be extended to 3 hrs. Shaking the dichloroalkaloids dissolved in alcohol with PtO_2 produced monochloro derivatives: monochlorosofoforidins: A- an oil, $[\alpha]_D = +17^\circ$ and B- a solid, m.p. 140-141°, $[\alpha]_D = +30^\circ$; monochloroleontin, m.p. 139-140°, $[\alpha]_D = -17^\circ$; α -monochloromatin, m.p. 106-107°, $[\alpha]_D = +29^\circ$ and monochloroisosofoforidin chlorohydrate, m.p. 273-275°. Monochloroisosofoforidin itself is an oil.

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ISKANDAROV, S., et al., Khimiya Prirodnikh Soyedineniy, No 2, 1971, pp 174--
179

$[\alpha]_D = -75^\circ$, which could be converted to dehydroisosoforidin by a reaction with sodium iodide and lithium carbonate in dimethylformamide; the product had a m.p. 97-98°, $[\alpha]_D = +50^\circ$.

UDC 533.6.013.42

USSR

KAMALGV, A. Z.

"Forced Oscillations of a Cylindrical Shell With Elastic Bottoms and Filled With a Compressible Fluid"

Tr. Seminara po teorii obolochek. Kazan. fiz.-tekhn. in-t AN SSSR (Works of the Seminar on the Theory of Shells. Kazan' Physicotechnical Institute of the Academy of Sciences USSR), 1971, No. 2, pp 198-213 (from RZh-Mekhanika, No 3, Mar 72, Abstract No SV503)

Translation: The steady-state forced oscillations of a system consisting of an elastic cylindrical shell filled with an ideal compressible fluid and having in the end cross sections elastic plates (bottom) fastened along the contour under the action of a harmonic load which is parallel to the axis of symmetry of the cavity and applied to the plates are investigated in the linear formulation. Conditions for a movable-hinged support are fulfilled at the ends of the shell. The conditions of the fastening exclude the possibility of displacement of the cavity as a solid body. The interaction of the shell and the plates occurs only through the liquid. Scattering of energy in the system is not taken into account. After separation of the time coordinate the velocity potential of the

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KAMALOV, A. Z., Tr. Seminara po teorii obolochek. Kazan. fiz.-tekhn. in-t
AN SSSR, 1971, No. 2, pp 198-213

liquid is represented in the form of two terms, one of which describes the behavior of the liquid in a rigid cylinder with elastic bottoms and the other describes the behavior in an elastic cylindrical shell with rigid bottoms. The Bubnov method is used to solve the equations of oscillations of the shell. A general solution is given for the plates in the form of the sum of the solutions of the homogeneous equation and the particular solutions corresponding to an external load and hydrodynamic pressure. The author uses the condition of impermeability of the walls of the cavity to reduce the solution of the problem to an infinite system of nonhomogeneous algebraic equations. The regularity of the system is proved. An approximate solution of the problem is given for the case when one can neglect the pressure field arising due to deformations of the shell. A sample of the calculation is given for the case of axisymmetric oscillations of the system (one bottom rigid). 8 ref. Yu. G. Balakirev.

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I/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THE VIABILITY OF THE BUK VACCINAL STRAIN OF AUJESZKY'S DISEASE
VIRUS IN AEROSOL -U-
AUTHOR--(03)-SELIVANOV, A.V., KHASANOV, CH.G., KAMALOV, G.KH.
COUNTRY OF INFO--USSR
SOURCE--VETERINARIYA, 1970, NR 2, PP 34-36
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--VIRUS, INFECTIOUS DISEASE, BIOLOGIC AEROSOL, VIRULENCE, TISSUE
CULTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1213

STEP NO--UR/0346/70/000/002/0034/0036

CIRC ACCESSION NO--AP0130223

UNCLASSIFIED

2/2 027
CIRC ACCESSION NO--AP0130223
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT. THE BUK VACCINAL STRAIN OF AUJESZKY'S DISEASE VIRUS IN AEROSOL LOSES ITS ABILITY TO INFECT A CULTURE OF CHICK EMBRYO CELLS, BUT RETAINS ITS VIRULENCE FOR RABBITS AND GUINEA PIGS. RABBITS AND GUINEA PIGS ARE SENSITIVE MODEL FOR STRAIN BUK VACCINAL VIRUS UPON INTRAMUSCULAR OR AEROSOL ADMINISTRATION. AEROSOL GENERATOR PEG,TGU,66 WITH PRESSURE OF 2.5 ATM AND FEED OF 2 ML-MIN OF VACCINAL SUSPENSION CREATES A STABLE, FINELY DISPERSED AEROSOL (PARTICLE SIZE NOT GIVEN). THE VIRAL DOSE ASPIRED BY THE ANIMALS WAS CALCULATED ACCORDING TO THE FORMULA $D = C \times V \times P \times T$, WHERE C IS THE CONCENTRATION OF VIRAL AEROSOL (IN TCID₅₀-ML) IN THE AEROSOL CHAMBER, V IS THE RESPIRATORY VOLUME (IN ML-MIN PER 1 G OF WEIGHT), P IS THE WEIGHT OF THE ANIMAL IN GRAMS, AND T IS THE TIME OF CONTACT WITH THE AEROSOL (IN MIN). FACILITY: KAZAN VETERINARY INSTITUTE.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ALKOXY COMPOUNDS. XLII. REACTION OF SODIUM ALKYLALPHA
ALPHA CHLOROBUTYL METHYL ETHER AND SOME REACTIONS OF ALKYLALPHA
AUTHOR-(04)-CHUMACHENKO, T.K., KAMALOV, G.L., BOGATSKIY, A.V., GREN, A.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 846-54

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MALONIC ESTER, ORGANOSODIUM COMPOUND, CHLORINATED ORGANIC
COMPOUND, METHYL ETHER, ALCOHOL, IR SPECTRUM, HYDROGEN BONDING,
HYDROLYSIS, CHEMICAL REDUCTION, METHOXY COMPOUND.

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1484

STEP NO--UR/0079/70/040/004/0846/0854

CIRC ACCESSION NO--AP0135148

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135148

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. REACTION OF SODIO MALONIC ESTERS WITH PRCHCLOME GAVE (SHOWN ON MICROFICHE). SAPON. WITH AQ. ALC. KOH GAVE MIXTS. OF MONO ET ESTERS AND FREE ACIDS, WITH THE LATTER PREDOMINANT FOR THE ME MEMBER ONLY; THE FOLLOWING PRCH(OME)CR(CO SUB2 H) SUB2 WERE REPORTED: ME, M. 102DEGREES; ET, M. 1290DEGREES; AND PR, M. 156DEGREES. THE ABOVE DI-ET ESTERS WERE HEATED 8 HR WITH 30PERCENT ALC. KOH GAVE MIXTS. OF ET ESTERS OF THE INDICATED CARBOXYLIC ACIDS IN WHICH THE RELATIVE AMTS. OF THE UNSATD. MEMBERS TENDED TO INCREASE WITH THE MOL. WT. OF THE ACIDS; CAREFUL FRACTIONATION YIELDED THE PURE COMPONENTS: (SHOWN ON MICROFICHE). VAPOR PHASE HYDROLYSIS OF THE ESTERS OVER AL SUB2 O SUB3 GAVE FREE PRCO SUB2 H, C SUB5 H SUB11 CO SUB2 H, ETMECHCO SUB2 H, AND THEIR ET ESTERS FROM THE SUBSTITUTED MALONATES, AND THE PROCESS RUN IN THE 250-370DEGREES INTERVAL ALSO GAVE MIXTS. OF UNSATD. AND ALKOXYLATED ACIDS AND ET ESTERS. REDN. OF THE MALONATES WITH LIALH SUB4 GAVGAVE (SHOWN ON MICROFICHE). THE ESTD. VALUES OF LENGTHS OF H BONDS IN THESE DIOLS WERE TABULATED FROM IR MEASUREMENTS; THE ENERGY OF THE INTRAMOL. BOND WAS ESTD. AT 3.5-4 KCAL PER MOLE AND THAT OF THE INTERMOL. BOND 8 KCAL PER MOLE IN THESE DIOLS.

UNCLASSIFIED

USSR

UDC 616.981.452-084.47

AGAFOV, V. I., BABIN, Ye. I., VDOVIN, D. G., VOROBEYCHIKOV, V. M.,
VOROB'YEV, A. A., GARLESHKO, Kh. P., GAYCHIKO, K. G., GEFEN, N. Ye., YEVSTIGNEYEV,
V. I., YEMEL'YANOVA, O. V., ZEMSKOV, Ye. M., IMAMALIYEV, O. G., KAMALOV, I. I.,
KVIRIKADZE, V. V., KUTYREV, P. A., MISHNIKOV, O. P., PUSHKAREV, V. P., and
ROZDESTVENSKIY, D. A., Military Medical Academy imeni S. M. Kirov, Leningrad

"A Comparative Efficiency Characteristic of Different Immunization Methods
Against Plague Infection"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1972,
pp 106-112

Abstract: Analysis of the available literature data led to the conclusion
that oral, aerogenic, and jet immunization methods are the most efficient
compared with subcutaneous and skin methods. The average number of patients
inoculated against plague infection was 517, 817 (419), and 937 per hr for jet
injectors, aerogenic method liquid and dry vaccine, and oral method (tablets),
respectively, compared with only 43 and 28 for the subcutaneous and skin
methods, respectively.

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USSR

KAMALOVA, K. Sh.

"Information Retrieval Using Manual Equipment for a Language of Objective and Aspect Descriptors"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 53, Tashkent, 1972, pp 170-177 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V634, by the author).

Translation: The retrieval capabilities of an IRL containing objective and aspect descriptors are demonstrated and estimated. This clarifies the capability of using this language in mechanized and automated IRS. Experiments involving superposition-type punch cards have shown that the language and retrieval algorithm provide an accuracy of retrieval of 72-74%.

USSR

UDC 621.791:061.3:669.2/.8

LYCSKO, I. I., and KAMALYAN, G. M., Candidates of Technical Sciences

"Inter-Republic Conference on the Technological Features of Welding Nonferrous Metals and Alloys"

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 71, p 58

Abstract: The Conference on the Technological Features of Welding Nonferrous Metals and Alloys was held on 22-24 October 1970 in the Yerevan Republic Hall of Technology. The conference was sponsored by the Armenian Administration of NTO MASHPRCM, The Republic Hall of Technology, the Yerevan Polytechnical Institute, and the Institute of Electric Welding imeni YE. O. Paton. Some 100 persons attended the conference, in which 25 papers were given.

The conference was opened by Deputy Director of the Armenian Administration of NTO MASHPRCM, Candidate of Technical Sciences N. V. Manukyan, who noted the broad application of various methods of welding nonferrous metals and alloys in the Republic.

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LYCHKO, I. I., and KAMALYAN, G. M., Svarochnoye Proizvodstvo, No 3, Mar 71, p 58

Doctor of Technical Sciences D. M. Rabkin (Institute of Electric Welding imeni YE. I. Paton), in an introductory speech, told about achievements in the field of welding nonferrous metals and the further development of welding technology.

A report by Doctor of Technical Sciences S. M. Gurevich and Engineers V. M. Ilyushenko and L. K. Bosak (Institute of Electric Welding imeni YE. O. Paton) discussed the features of submerged-arc welding of thick-sheet copper and chromium bronze. Experience in the production of copper and copper-alloy weldments was discussed by Candidate of Technical Sciences I. I. Dzhevag (Nikolayev Shipbuilding Institute).

The problems of developing and studying electroslog welding of large cross-sections of copper were reviewed in a report by Candidates of Technical Sciences I. I. Lychko, and I. I. Sushchuk-Slyusarenko and Engineers V. M. Ilyushenko and A. P. Alekseyenko (Institute of Electric Welding imeni YE. O. Paton).

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LYCHKO, I. I., and KAMALYAN, G. M., Svarochnoye Proizvodstvo, No 3, Mar 71, p 58

Engineer V. YA. Gluchko and Candidate of Technical Sciences YU. M. Rubenchik (All-Union Scientific Research Institute for Commercial Transportation of Chemical and Petroleum Equipment, Volgograd) reported on the metallurgical and technological features of welding copper with an unshielded arc. A report on the weldability of copper produced by the Alavardsk Copper-Chemical Combine was given by Engineer V. N. Kitayev.

Reports by Doctor of Technical Sciences D. M. Rabkin, Candidate of Technical Sciences N. M. Voropdy and A. I. Korniyenko, and Engineer A. A. Bondarev discussed new process of welding light metals and alloys by electron beam, plasma, and asymmetrical a-c current and the technology of preparing the surface of aluminum alloys where there is a long time interval between preparation and welding. Engineers A. D. Korneyev and V. YA. Zusin (Zhdanov Metallurgical Institute) discussed some problems in the submerged-arc welding of aluminum alloys under a layer of ceramic flux. Candidate of Technical Sciences R. S. Karamyan reported on

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LYCHKO, I. I., and KAMALYAN, G. M., Svarochnoye Proizvodstvo, No 3, Mar 71, p 58

Engineer V. YA. Gluchko and Candidate of Technical Sciences YU. I. Rubenchik (All-Union Scientific Research Institute for Commercial Transportation of Chemical and Petroleum Equipment, Volgograd) reported on the metallurgical and technological features of welding copper with an unshielded arc. A report on the weldability of copper produced by the Alavardsk Copper-Chemical Combine was given by Engineer V. N. Kitayev.

Reports by Doctor of Technical Sciences D. M. Rabkin, Candidate of Technical Sciences N. M. Voropdy and A. I. Korniyenko, and Engineer A. A. Bondarev discussed new process of welding light metals and alloys by electron beam, plasma, and asymmetrical a-c current and the technology of preparing the surface of aluminum alloys where there is a long time interval between preparation and welding. Engineers A. D. Korneyev and V. YA. Zusin (Zhdanov Metallurgical Institute) discussed some problems in the submerged-arc welding of aluminum alloys under a layer of ceramic flux. Candidate of Technical Sciences R. S. Karamyan reported on

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USSR

LYCHKO, I. I., and KAMALYAN, G. M., Svarochenoye Proizvodstvo, No 3, Mar 71, p 58

the features of high-pressure shielded arc welding with a consumable electrode.

Doctor of Technical Sciences A. A. Alov and Engineers YU. A. Filatov and L. A. Lovchenko (VILS, Moscow) presented a paper on the theme "Effect of Metallurgical Heredity of Alloy AMg6 Semi-Finished Products on Their Thermal Weldability."

Candidates of Technical Sciences N. M. Voropay and V. S. Gvozdetzkiy and Engineer V. V. Shcherbak (Institute of Electric Welding imeni YE. O. Paton) reported on recent developments, studies, methods, equipment, and technology for microplasma welding of nonferrous alloys. In the report of Candidate of Technical Sciences A. M. Boldyrev and Engineers V. G. Antonov and E. V. Dorofeyev (Voronezh Polytechnical Institute) the effect of a magnetic field on weld bath crystallization in the welding of magnesium alloys was examined. V.I. Alekseyenko and Engineer G. G. Psaras (Zhdanov Heavy Machine Building Plant) discussed the

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USSR

LYCHKO, I. I., and KAMALYAN, G. M., Svarochenoye Proizvodstvo, No 3, Mar 71, p 58

welding of aluminum and its alloys in argon and oxygen with a consumable electrode. The reports "Bathless Electric Arc Hard Surfacing of Nonferrous Metals and Alloys" and "Features of Electrode Metal Transfer in Large-Panel Proportioned Hard Surfacing on Contacts" were presented by Engineer V. A. Fursov, Candidate of Technical Sciences M. S. Samotryasov (Kiev Polytechnical Institute), and Engineer I. M. Ysekhnister.

Candidate of Technical Sciences YE. I. Stargay (VNIIsriogenmash, Moscow) described studies of electrochemical behavior of AMts alloy during brazing salts melts and dehydration of salt melts in the brazing of aluminum alloys.

Problems of thermodynamics and kinetics of the mechanism of joint formation in the welding of metals in the solid phase were examined in the report of Doctor of Technical Sciences M. KH. Shorshorov, Candidates of Technical Sciences E. S. Kara-

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LYCHKO, I. I., and KAMALYAN, G. M., Svarochenoye Proisvodstvo, No 3, Mar 71, p 58

kozov and V. A. Petrosyan, and Engineer L. V. Afrikyan (Institute of Metallurgy imeni A. A. Baykov). Results of investigations on the activation of metal surfaces by cathode diffusion in the welding arc were the theme of a report by Engineer V. A. Fursov (Kiev Polytechnical Institute) and Candidate of Technical Sciences N. M. Voropay.

Candidate of Technical Sciences G. M. Kamalyan and Engineer R. V. Ter-Grigoryan (Yerevan Compressor Plant) reported on studies of the effect of technological parameters on the productivity of the plasma surfacing process for nickel alloys and features of their application with the use of a compressed arc. The report of M. Z. Lokshin, A. P. Sirovskaya, and L. P. Alekhin was devoted to an investigation of the parameters for radio-frequency welding of aluminum tubes.

Problems of stress and strain in the welding of nonferrous

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USSR

LYCHKO, I. I., and KAMALYAN, G. M., Svarochenoye Proisvodstvo, No 3, Mar 71, p 58

metals and alloys were the theme of the report by Candidates of Technical Sciences A. YA. Nedoseka and A. A. Kazimirov (Institute of Electric Welding imeni YE. O. Paton).

The report of Doctor of Technical Sciences D. M. Rabkin and Candidate of Engineering Sciences V. R. Ryabov (Institute of Electric Welding imeni YE. O. Paton) was devoted to the welding of different combinations of metals, the properties of composite joints, and the results of introducing dissimilar metal weldments into industry. Engineer V. A. Dertsakyan (Armenian Electrical Plant, Yerevan) discussed the nature of physical-chemical phenomena in copper-aluminum weld joints.

Candidate of Technical Sciences P. I. Gurskiy (Institute of Electrical Welding imeni YE. O. Paton) reported on a semi-automatic units for cold butt welding of nonferrous metals and alloys.

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LYCHKO, I. I., and KAMALYAN, G. M., Svarochenoye Proisvodstvo, No 3, Mar 71, p 58

Much interest was shown in the report of Candidate of Technical Sciences D. I. Kotel'nikov (Chernigov Affiliate of the Kieve Polytechnical Institute) which was devoted to the use of ion heating for solid-phase welding of nonferrous, refractory, and active metals. The technology and equipment have been developed for diffusion welding at temperatures up to 2260°C in a pressure range of 10 to 760 mm Hg.

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USSR

UDC 621.791.008.1

VORCPAY, N. M., and KAMALYAN, G. M.

"Conference on Welding Ferrite Metals and Alloys"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 71, pp 76-77

Abstract: A report is given of the transactions of a conference held in Yerevan on October 22-24, 1970 which was sponsored by the Armenian Administration of the Scientific Technical Division of Mashprocm, the House of Technology, the Yerevan Polytechnical Institute, and the Institute of Electric Welding imeni Ye. O. Paton. Participants in the conference came from all the republics in the Soviet Union. The keynote address was by V. N. Manukyan, who noted the wide use of various methods of welding ferrite metals. Another speaker, D. M. Rabkin, discussed the contemporary state of the art, with emphasis on perfecting the methods and techniques of ferrite metal welding. Following his talk, 25 reports were read and discussed. A brief resume of each of these papers is given.

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USSR

UDC 617-001.28-092.9-07:[616.155.3:576.858.095.383]-078

KAMALYAN, L. A., YENGOYAN, M. N., and VARTEVANYAN, Zh. Ts.

"Production of Leukocyte Interferon in Irradiated and Intact Dogs"

Moscow, Voprosy Virusologii, No 5, 1971, pp 552-555

Abstract: Leukocytes isolated from the peripheral blood of dogs and treated with Newcastle disease virus strain A produced interferon, whose activity varied with the dose of the interferon inducer, the number of leukocytes, and the time the leukocytes were used (freshly isolated cells were best, while refrigeration of cell suspensions for 24 and especially 48 hours markedly reduced their capacity to produce interferon). Single whole-body X-irradiation (400 r) significantly lowered interferon titers on days 2 and 7 after exposure in most of the dogs. A mild course of radiation sickness occurred in those animals in which irradiation did not impair the synthesis of leukocyte interferon. Analysis of interferon isolated from dogs before and after irradiation showed that it was identical in resistance to heating to 56°C for 30 minutes and sensitivity to trypsin.

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Acc. Nr.: AP0050224

KAMANIN N.

Ref. Code: 1150000

PRIMARY SOURCE: FBIS Daily Report, Soviet Union, 8 April 1970, Vol III,
Nr 68, pp D 9 - D 10

USSR

COSMONAUT TRAINING CENTER MARKS 10TH ANNIVERSARY

Moscow TASS International Service in English 1522 GMT 7 Apr 70 L

[Text] Moscow April 7, TASS--During his one-year training for a space flight the Soviet Cosmonaut Alexei Leonov covered about a thousand kilometres on bicycle, made two hundred cross-country races and covered three hundred kilometres on skis, whereas Herman Titov boarded different planes 800 times and spent hundreds of hours in flight.

These figures were cited by Colonel General of the Air Force Nikolai Kamanin in his feature story about the Soviet Space Training Centre, which will be ten years old this month. The feature story was published in the magazine "AVIATSIYA AND KOSMONAVTIKA".

A group of socialists of which General Kamanin was one of the leaders, was set up to start this centre by the decision of the CPSU Central Committee and government. In

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1960 Kamanin was summoned from Central Asia by Konstantin Vershinin, commander-in-chief of the air force, and was entrusted with the training and selecting of cosmonauts. "Our main task was to organise a cosmonauts' detachment and set up a space training centre," Kamanin writes.

At present this centre, known as "Zvyozdny Gorodok" has grown into a real town with all modern conveniences, but at the time it was an ordinary forest in Moscow region, far from noisy thoroughfares, factories and busy cities.

In the midst of a pine forest the walls of a hotel, a canteen, headquarters and academic building began growing up day by day.

Among the experienced specialists who began pioneering work to set up the space training centre, Kamanin mentions Major General of Aviation Leonid Goreglyud, who downed about ten dozen Hitler planes during the war, and Colonel Boris Aristov, a navigator.

It was clear that the man who will lead the group of future spacemen will have to be a chief and a teacher and at the same time a daring experimentalist. Colonel Yevgeniy Karpov, connoisseur of aviation medicine, became the chief of the centre. "The cosmonauts' deep-felt gratitude to the first chief of the centre is an appreciation of his great efforts to establish and mould this collective body," Kamanin says.

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The future cosmonauts Gagarin, Titov, Nikolayev, Popovich and other fighter-pilots came to Zvyozdny in March 1960. They were to master the rudiments of rocketry and space engineering, the design of the spacecraft Vostok, astronomy, geophysics and space medicine.

There was a lot of parachute jumping training at the first stage. The training was directed by Lieutenant Colonel Nikolai Nikitin, the world record hold, who died later during an experimental jump.

Flight training was directed by well known test pilots, specifically Anatoly Starikov. A special laboratory was set up aboard a TU-104 plane for training for flights in conditions of weightlessness.

"Step by step our cosmonauts climbed higher and higher to earn the right to pilot spaceships," General Kamanin writes.

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KAMARALI, V.V.

JPRS 59308

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VII-6. FORM OF GROWTH OF DISLOCATIONLESS SINGLE CRYSTALS OF SILICON GROWN BY THE MONOCRUCIBLE ZONE MELTING METHOD

Article by V. V. Kamarali, S. A. Kuzavlev, S. A. Semakova, Novosibirsk: Novosibirsk, III Sibirskiy po Prosvetam Roda I Sibirskaya Politehnicheskaya Akademiya i Pribor, Krasnoy, 12-17 June 1972, p 107

The dislocation single crystals of silicon are cylindrical and the form of growth of dislocationless single crystals varies as a function of the supercooling of the melt and the coincidence of the crystallographic axis [111] with the geometric axis of the bar and with the axis of the thermal field. In individual cases twinning takes place. The disappearance of the faceting elements of single crystals is accompanied by avalanche formation of dislocations. The form of growth of dislocationless single crystals can be used as the criterion for optimizing the growth conditions.

- III -

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USSR

UDO 621.515.592.546.28

ANTONYAN, V.G., GRINBLAT, S.L., KAMARALI, V.V., MURAVITSKIY, S.A.

"Some Causes Of Radial Nonuniformity With Respect To Resistivity Of Noncrucible Silicon Monocrystals"

V sb. Tekhnol. materialov elektron. tekhn. (Technology Of Materials For Electronics Technics--Collection Of Works), Krasnoyarsk, 1970, pp 144-147 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11154)

Translation: The uniformity is investigated of the distribution of electrical conductivity in a cross section of crystals grown by the method of noncrucible zone melting. The effects of regimes for the growth of monocrystals on the uniformity are shown, as well as the possibility of reducing the magnitude of the spread of the resistivity from seven to five percent because of their optimum matching. 2 ill. 3 ref. Summary.

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USSR

UDC 669.189:669.046.554

KAMARDIN, V. A., RASKEVICH, N. N., and KASPER, N. V., Zaporozh'ye

"Desulfurization of Steel During Outside-Of-Furnace Refining Using Alumo-silicate Slags"

Moscow, Akademiya Nauk SSSR. Izvestiya. Metally, No 6, Nov-Dec 72, pp 47-53

Abstract: A study is made of the effect of metallurgical factors (temperature, chemical composition of metal and slag) on the equilibrium and actual distribution of sulfur between metal and slag during outside-the-furnace refining of steel using the basic aluminosilicate slags. With the use of basic aluminosilicate slags, containing up to 20% SiO_2 , with small additions of magnesium oxide and calcium fluoride ($\sim 5\%$), the same degree of desulfurization can be attained as that by using lime-alumina slags.

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- 18 -

USSR

Extraction and Refining

UDC: 669.187.2:083.4

KAMARDIN, V. A., ANTOPOV, O. F., Zaporozh'ye

"Mass Transfer of Oxygen and Nitrogen During Refining of Steel by Melting in a Vacuum"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 49-56.

Abstract: Earlier works on the mechanism of vacuum-arc and cathode-ray melting have not clarified the mechanism of the process. Some works give preference to a mechanism in which oxygen is present in bonded form before it is removed with the gas phase, making it difficult to explain the role of the vacuum in the refining process. In this article, the thermodynamics of the reactions of refining of iron-based alloy melts to remove oxygen and nitrogen are studied. In the removal of oxygen, the primary reaction is $[C] + [O] = CO_{(g)}$, reactions involving the formation of gaseous monoxides of silicon and aluminum being less important. The possibility is shown of dissociation of nitrides at the metal-gas phase division boundary, with the formation of molecular nitrogen. A kinetic model is suggested for the process of refining metals to remove oxygen and nitrogen upon melting in a vacuum, based on which the analytic dependence of the degree of refining on the metal-gas interaction

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USSR

Kamardin, V. A., Antopov, O. F., Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 49-56.

surface and melting rate is produced. Based on the thermodynamic and kinetic regularities discovered, the mechanism of removal of nonmetallic inclusions in steel is analyzed.

Titanium

USSR

UDC 669.15'295-194

KAMARDIN, V. A., YEFIMOV, I. V., KASPER, N. V., NIKITIN, B. M., and YAKOVLEV, N. F.

"Role of the Lower Oxides in Titanium Redox Reactions During Electrical Melting of Titanium-Containing Steels"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 72, pp 66-70

Abstract: An investigation was made in an attempt to determine the mechanism of titanium oxidation (reduction) in normal steel melting processes. Tests were made using steel OKh18NiOT and a synthetic slag of the $\text{CaF}_2\text{-Al}_2\text{O}_3$ system which were melted in a TVV-5 crucible vacuum furnace. To the molten metal, having a constant alumina content (40%), titanium dioxide was added (up to 20%). With increased TiO_2 concentration, the amount of Ti_2O_3 in the slag also increased and small quantities of TiO were found. These titanium oxides depleted some of the titanium in the original metal and lowered the equilibrium concentration of Ti . In order to neutralize the negative action of weak oxides it is necessary to provide for a higher $\text{Ti}_2\text{O}_3/\text{TiO}_2$ ratio in the slag, which can be done by having a higher TiO_2 content in the initial slag. Four figures, 1 table, 6 bibliographic references.

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USSR

UDC 669.71.472

ZAZOVSKIY, D. G., KAMAR'YAN, G. M., KUBASOV, V. L., SHIFRIN, L. N.

"Method of Connecting Conducting Buses"

USSR Author's Certificate No 280867, filed 8 Jun 68, published 3 Dec 70 (from RZh-Metallurgiya, No 7, Jul 1971, Abstract No 7G210P)

Translation: A method of connecting conducting buses of electrolysis baths by a low-melting alloy in the gap between the ends of the buses is proposed. In order to reduce oxidation of the alloy and improve the electrical contact between the buses, the amount of heat released from the contact connection is regulated so that during operation of the bath, the alloy is kept in the solid state, and during assembly and disassembly of the contact connection, in the liquid state. There is 1 illustration.

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UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--ELECTROLYTIC CELL FOR THE ELECTROLYSIS OF A MOLTEN ELECTROLYTE --

AUTHOR--(05)--ACAEV, E.I., BLINOV, A.V., KAMARYAN, G.M., NOVOSELOV, V.A.,
SUCHKOV, V.N.

COUNTRY OF INFO--USSR

SOURCE--BRIT. 1,185,481

DATE PUBLISHED--25MAR70

SUBJECT AREAS--CHEMISTRY, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SODIUM, ELECTROLYSIS, SODIUM CHLORIDE, ELECTROLYTE, CHLORINE,
PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1972

STEP NO--UK/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0115771

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0115771

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE ELECTROLYTIC CELL FOR THE PRODUCTION OF METALLIC NA BY THE ELECTROLYSIS OF A FUSED SALT BATH CONTG. NA₂CL COMPRISES A CENTRAL CYLINDRICAL ANODE BUILT UP OF GRAPHITE BARS, PROVIDED WITH WATER COOLING, AND SEALED IN THE BASE OF A STEEL SHELL, LINED WITH FIRE BRICK, WHICH CONTAINS THE MOLTEN SALT BATH. THE ANODE IS ENCIRCLED BY A CAST STEEL CATHODE SEPD. FROM THE ANODE BY AN FE OR ALLOY MESH SCREEN SUSPENDED FROM A COLLECTOR OR DOME TO PREVENT RECOMBINATION OF THE NA AND CL SUB2. THE NA EVOLVED AT THE CATHODE RISES INTO THE OUTER RING OF THE DOME AND THENCE TO A COLLECTOR, WHILE THE CL SUB2 GAS RISES THROUGH THE CENTRAL DOME TO A GAS COLLECTING SYSTEM.

UNCLASSIFIED

USSR

UDC 542.91 + 541.2 + 547.242

CHADAYEVA, N. A., MAMAKOV, K. A., SHAGIDULLIN, R. R., and KAMAY, G. Kh.
(deceased)

"Synthesis and Some Properties of β -Hydroxyethyl Esters of Trivalent Arsenic Thioacids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 4, Apr 73, pp 824-834

Abstract: New β -hydroxyethyl esters of trivalent arsenic thioacids have been synthesized by the reaction of thiol exchange and exchange of the alkoxy group by the thiol group. The reaction appears to go by the mechanism analogous to transesterification of trivalent phosphorus esters. The products are dense colorless liquids soluble in organic solvents, insoluble in water. They can be distilled in vacuum without decomposition, are stable in air to oxygen but are attacked by strong oxidizers. With acyl halides these compounds form arsenic halides and β -acetoethyl esters of thioacetic acid. Prolonged heating of β -hydroxyethyl esters of alkyl(aryl)thioarsonous and thioarsonic acids yields respective 1,3,2-oxathiaarsolane derivatives. Physical properties and IR spectra of the synthesized materials have been determined.

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- 11 -

USSR

UDC 542.91 + 547.26'119

CHADAYEVA, N. A., MAMAKOV, K. A., and KAMAY, G. Kh. (deceased)

"Some Properties of the Derivatives of Oxathiaarsolane"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 4, Apr 73, pp 821-824

Abstract: 2-Phenyl-1,3,2-oxathiaarsolane (I) reacts exothermically with ethylenethioglycol forming di(β -hydroxyethyl)phenyldithioarsonite (II). In an analogous reaction 1'-hydroxy-2'-thiobis(1,3,2-oxathiaarsolanyl)-ethane with ethylenethioglycol yields tri(β -hydroxyethyl)trithioarsenite; 2-phenyl-1,3,2-oxathiaarsolane and thiophenol give (II) and diphenyl ester of phenyldithioarsonous acid. Bromination of (I) in carbon tetrachloride yields phenyldibromoarsine, reaction of acetyl bromide with (I) produces phenyldibromoarsine and β -acetoethyl ester of thioacetic acid and magnesium organic compounds reacted with (I) give tertiary arsines. Water hydrolyzes (I) to As_2O_3 .

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USSR

UDC 542.91:547.1'119

CHADAYEVA, N. A., KAMAI, G. KH (Deceased), and MAMAKOV, K. A., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc. USSR

"Reaction of As (III) Thioacid Esters With Halogens and Some Halogen Containing Compounds"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, Jul 72, pp 1612-1616

Abstract: Reaction of trivalent arsenic-thioacid esters with chlorine, bromine, iodine chloride, sulfuryl chloride, thionyl chloride, HCl, PCl_3 , phenyldichlorophosphine and ethylphenylchlorophosphine takes place with a total break of the As-S bond forming respective arsine halides and sulfur containing compounds. This resulted in an assumption that a sulfur atom in thioesters is a more reactive center than arsenic. In such a case electrophilic addition of Hal^+ to the sulfur yields a sulfonium intermediate product which then splits along the As-S bond due to a partial shift of electronic density from As to S.

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USSR

UDC 546.26'119

CHERNOKAL'SKIY, B. D., ABAIONIN, B. Ye., SHAGIDULLIN, R. R., IZOSIMOVA, S. V.,
and KAMAY, GIL'M. Kazan' Chemical-Technological Institute imeni S. M. Kirov

"Reaction of the Esters of Arsenious Acids with Alkyl Halides"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2645-2648

Abstract: It was demonstrated earlier by several of the authors that during the reaction of the esters of arsenious acids with alkyl halides, instead of the expected alkoxyarsenium salts, quaternary arsonium salts are formed; it was of interest to study the effect of the structure of the starting ester on that of the final product.

A series of esters of several arsenious acids were studied for this purpose; these differed with regard to the nature of the hydrocarbon radical of the ester group. It was shown that the hydrocarbon radical of the alkoxy group in no case enters into the composition of the arsenious salt formed.

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USSR

UDC 541.127+547.242+547.224

CHERNOKAL'SKIY, B. D., YENIKEYEV, Sh. G., BAYRAMOV, R. B., KAVIYEV, A. K.,
and KAMAY, GIL'M. Kazan' Chemical-Technological Institute imeni S. M. Kirov

"Electrical Conductivity of the Reaction Mixture and Rates of the Elementary Stages of the Reaction of Triphenylarsine Oxide with Butyl Iodide"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2648-2653

Abstract: It was demonstrated that in the reaction between triphenylarsine oxide and butyl iodide, there is an intermediate stage in which triphenylbutoxyarsonium iodide is formed; the variation in the concentration of this intermediate product during the course of the reaction was approximately determined.

The reaction constants were then determined by solution of the variation problem with use of electronic computers, for the elementary stages of the reaction.

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USSR

UDC 543.422.25:546.19

ZYKOVA, T. V., KAMAY, GIL'M (deceased), CHERNOKAL'SKII, E. D., SALAKHUTDINOV, R. A. and ABALONIN, B. Ye., Kazan Chemical-Technological Institute imeni S. M. Kirov

"PMR Spectra and Structures of Arsonium Salts"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 1044-1047

Abstract: PMR spectrum analysis was used to study the structures of alkylarsonium salts. The chemical shifts as caused by the nature of the arsenic atom environment, an anion, and the nature of the solvent and the concentration of the salts were examined. Thus, a change in the magnitude of the chemical shift of the methyl or methylene groups at the arsenic atom increases the positive charge on the latter in arsonium salts under the action of iodine, the phenyl group, and the possibility of the salt to ionize.

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- 43 -

KAMAY

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Acc. Nr:

AP0049140

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

UR0079

100851h Products of the reaction of triphenylarsine sulfide with alkyl halides. Chernokal'skii, B. D.; Levenshtein, I. B.; Kamai, G. (Kazan. Khim.-Tekhnol. Inst. im. Kirova, Kazan, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 148-51 (Russ). Re-fluxing Ph_3AsS in $\text{MeI-Me}_2\text{CO}$ 15.5 hr gave, after washing with cold EtOAc , a residue of 10.7% Ph_3MeAsI , m. 175°, and 34% Ph_3MeAsI , (I) m. 108-9°. Similar reaction with EtI in Me_2CO gave 41.4% Ph_3EtAsI , m. 125-6° and 4.5% Ph_3EtAsI , m. 157-8°; on some occasions 5% Ph_3As was formed. Reaction with PrI 51 hr gave 24.3% Ph_3PrAsI , m. 158°. I heated with Hg in Me_2CO 7 hr gave 22.8 g $(\text{Ph}_3\text{MeAs})_2\text{HgI}_2$, m. 163-70° (cf. Baig, *et al.*, 1962), and more sol. $\text{Ph}_3\text{AsMe.HgI}_2$, m. 138-9°. Similar treatment of $\text{Ph}_3\text{EtAsI}_2$ gave 67.5% $\text{Ph}_3\text{EtAs.HgI}_2$, m. 106°. Similarly was prepd. $\text{Ph}_3\text{PrAs.HgI}_2$, m. 97°.

G. M. Kosholapoff

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Acc. Nr:

AP0053450

KAMAY
Abstracting Service:
CHEMICAL ABST.

5/70

Ref. Code:

U180366

110714e Structure of products of the alkaline alkylation of aliphatic aldioximes. Kamai, G.; Nikolaeva, A. D.; Perekhod'ko, V. S.; Zykova, T. V. (Kazan. Khim.-Tekhnol. Inst. im. Kirova, Kazan, USSR). Zh. Org. Khim. 1970, 6(2), 394-5 (Russ). The basic alkylation of RCH:NOH gave RCH:NOR¹ (syn- and anti-forms by NMR spectroscopy) and the anti-form of RCH:N(O)R¹.
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19830475

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Acc. Nr:

AP0049139

Abstracting Service:

CHEMICAL ABST. 5-7

Ref. Code:

100850g Kinetics of the interaction of arylalkylarsine oxides with butyl iodide. Chernokalskiy, B. D.; Gel'fond, A. S.; Kamai, G. (Kazan. Khim. Tekhnol. Inst. im. Kirova, Kazan, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 151-5 (Russ). Heating 1 g p - $\text{O}_2\text{NC}_6\text{H}_4\text{AsEt}_2\text{O}$ 28 hr with 1.7 g iso-PrI in Me_2CO gave 69% p -nitrophenyldiethyl(p -nitrophenyldiethylarsoxy)-phenyl (m. 126-7°) and p -chlorophenyl analogs, m. 125-6°. Reaction with p - $\text{Me}_2\text{NC}_6\text{H}_4\text{AsEt}_2\text{O}$ gave p - $\text{Me}_2\text{NC}_6\text{H}_4\text{AsEt}_2\text{O}$ -HI, m. 107-9°. Reactions of PhAsEt_2O or p -tolyl analog, with MeI, EtI or PrI gave noncrystallizing syrups. Reactions of ArAsR_2O with BuI were studied kinetically and formation of $\text{R}_2\text{As(OH)OAsR}_2\text{I}$ products by the above reaction was examd. for ArAsR_2O (R = Et, Pr or Ph; Ar = Ph or p - NO_2 , Br, or Cl-, Me-, MeO-, MeN-, or o - MeC_6H_4). The overall reaction is described by apparent 3rd order equation, and groups that increase the nucleophilic nature of the arsine oxide change the kinetics to 2nd order. The rate consts. of the overall process are correlated readily with either Hammett or Taft substituent consts. of groups present in the aryl component.

G. M. Kosolapoff

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Acc. Nr:

AP 0049127

Abstracting Service:
CHEMICAL ABST.

Ref. Code:

UR 0079

99758z Mechanism of the reaction of triphenylarsine oxide with butyl iodide. Chernokalskii, B. D.; Bairamov, R. B.; Kamal, G. (Kazan. Khim.-Tekhnol. Inst. im. Kirova, Kazan, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 143-8 (Russ). The formation of $\text{Ph}_3\text{As}(\text{OH})\text{OAsPh}_3\text{I}$ (I) from reaction of Ph_3AsO and BuI in Me_2CO (cf Ch. *et al.* 1969) proceeded through a reversible formation of Ph_3AsOBuI , followed by irreversible reaction of this with Ph_3AsO . The irreversibility was shown by passing 1-butene 6 hr into I in Me_2CO at 50° , during which the cond. of the system remained const. and the concn. of I was unaltered. Thus, the reaction follows the steps: $\text{R}_3\text{AsO} + \text{RI} \rightleftharpoons \text{R}_3\text{As}^+\text{OR}^- + \text{I}^-$; $\text{R}_3\text{As}^+\text{OBu} + \text{R}_3\text{AsO}^- \rightleftharpoons \text{R}_3\text{As}^+\text{OCH}_2\text{CH}_2\text{CH}_2\text{CH}_3 + \text{OAsR}_3$; $+ \text{I}^- \rightarrow \text{EtCH}=\text{CH}_2 + \text{R}_3\text{As}(\text{OH})\text{OAsR}_3\text{I}$. The rate const. of formation of Ph_3AsOBuI were tabulated from 40° - 55° . The data on rates of reaction at various concns. of the reactants gave at 20° , 25° , 30° and 35° , data for calcn. of apparent formation rate const. using apparent 2nd order kinetics, from which the activation energy was calcd. to be 15.3 kcal/mole and activation entropy -24.3 entropy units. The rate const. was max. in PhNO_2 , followed in order by Me_2CO , tetrahydrofuran, MeOH , and PrOH .

G. M. Kosolapoff

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19800933

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G. KAMAY

Acc. Nr:

A0053349

Abstracting Service:

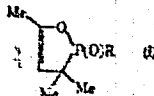
CHEMICAL ABST.

5/10

Ref. Code:

UR0079

111569 Reaction of ethyl- and phenyldichlorophosphine with
acetone. Nurtidinov, S. Kh.; Tsiyunin, V. S.; Khairullin, R.
S.; Kashitang, V. G.; Kamat, G. (Kazan. Khim.-Tekhnol.
Inst., Kazan, USSR). Zh. Obshch. Khim. 1970, 40(1), 16-19



(Russ). Heating in a sealed tube 22 g EtPCl₂ and 19.2 g Me₂CO
10 hr at 75-80° gave 87% I (R = Et) b_p 80-2°, d₄²⁰ 1.4630, n_D²⁰
1.4768. PhPCl₂ similarly gave in 20 hr at 100° 70% I (R = Ph),
b_p 130°, 1.0310, 1.5416. Heating I with R-OH in a sealed tube
at 100-60° several hr gave RP(OR')CMe₂CH₂Ac (R and R'
shown): Et, Me, 73%, b_p 112-13°, 1.0670, 1.4945; Ph, Me,
50%, b_p 149-52°, 1.1260, 1.5255; Et, Et, 63%, b_p 129-30°,
1.0400, 1.4610; Et, Pr, 57%, b_p 131-3°, 1.0300, 1.4640; Et,
iso-Pr, 52%, m. 82-4°; Et, Bu, 49%, b_p 80-8°, 1.0250,
1.4531; Et, C₆H₅, 51%, b_p 122-4°, 0.0837, 1.4302; Ph, Et,
67%, b_p 154-5°, 1.1250, 1.5235 (2,4-dinitrophenylhydrazone

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19830371

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m. 213°); Ph, Pr, 70.8%, b.p. 141-3°, 1.0870, 1.5137 (2,4-dinitrophenylhydrazones m. 203°); Ph, iso-Pr, 56.9%, b.p. 131-3°, 1.0685, 1.5150; Ph, Bu, 67.5%, b.p. 146-8°, 1.0897, 1.5110; Ph, iso-Bu, 52.3%, b.p. 158-60°, 1.0741, 1.5115; Ph, C₆H₁₁, 69%, b.p. 160-70°, 1.0613, 1.5068; Ph, iso-C₆H₁₁, 71%, b.p. 138-40°, 1.0630, 1.5075. Heating I with H₂O slightly acidified with HCl 8 hr at 110° gave 52-4% AcCH₂CM₂P(O)(OH)R; Et, m. 112-13°; Ph, m. 121° (aniline salt, m. 124°).

G. M. Kosolapoff

19830372

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--REACTION OF PHOSPHORUS PENTACHLORIDE WITH TETRAHYDROFURAN -U-
AUTHOR--(03)-FRIDLAND, S.V., KAMAY, G., VOLOBOYEVA, L.V.
COUNTRY OF INFO--USSR
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DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHOSPHORUS CHLORIDE, FURAN, ANILINE, ORGANIC PHOSPHORUS
COMPOUND, ORGANIC SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
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CIRC ACCESSION NO--AP0124594
UNCLASSIFIED

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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124594

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THIS ABSTR., R EQUALS 2, 3-DIHYDRO-4-FURYL. TO 50 G THF IN 250 ML C SUB6 H SUB6 WAS SLOWLY ADDED 433 G PCL SUB5 AT 5-10DEGREES, AND THE MIXT. KEPT OVERNIGHT AND TREATED WITH DRY SO SUB2 TO GIVE 77PERCENT 2,3-DIHYDRO-4-FURYLPHOSPHONIC DICHLORIDE, M. 50-1DEGREES, B SUB7 112DEGREES, WHICH WITH MECH AND PYRIDINE GAVE RP(O)(OME) SUB2 54PERCENT, B SUB9 128-30DEGREES, D PRIME20 1.2313, N PRIME20 SUBD 1.4686; DI-ET ESTER, 49PERCENT, B SUB10 133-5DEGREES, 1.1431, 1.4612; DI-PR ESTER, 55.6PERCENT, B SUB9 151-3DEGREES, 1.0922, 1.4591; DIISO-BU ESTER 53DEGREES, 4PERCENT, B SUB8 157-8DEGREES 1.0504, 1.4576; DI-BU ESTER, 49.8PERCENT, B SUB5 155-7DEGREES, 1.0572, 1.4588; DIISOAMYL ESTER, 55.5PERCENT, B SUB9 179-91DEGREES, 1.0264, 1.4581; DIAMYL ESTER, B SUB5 170-1DEGREES, 1.0271, 1.4579. WHEN RPOCL SUB2 WAS HYDROLYZED AND THE RESULTING CRUDE ACID SOLN. TREATED WITH PHNH SUB2, IT GAVE THE MONOANILINE SALT, M. 108-9DEGREES. THF REACTS WITH 3 MOLES PCL SUB5 TO YIELD RPOCL SUB2 ABOVE, POCL SUB3, 2SOCL SUB2, AND 3 HCL, AFTER TREATMENT OF THE MIXT. WITH SO SUB2 AS INDICATED. THE INITIAL REACTION MUST BE RUN WITH VERY EFFECTIVE COOLING AND REQUIRES UP TO 2 DAYS FOR ELIMINATION OF HCL AT ROOM TEMP. FACILITY: KAZAN. KHIM.-TECHNOL. INST. IM. KIROVA, KAZAN, USSR.

UNCLASSIFIED

USSR"

KAMAY, G. KH., ERRE, E. A., and KHARRASOVA, F. M.

"Synthetic Method for Amidoesters of Alkyl(aryl)thiophosphoric Acids"

USSR Author's Certificate No 367112, filed 1 Mar 71, published 12 Mar 73
(from RZh-Khimiya, No 19, Oct 73, Abstract No 19N504 P)

Translation: The method is based on the reaction of acid alkyl esters of alkyl(aryl)thiophosphonous acids with amines or hydrazines in CCl_4 :
 $\text{RP(S)(OR')} + 2\text{R}''_2\text{NH} + \text{CCl}_4 \longrightarrow \text{RP(S)(OR')NR}''\text{R}''(\text{I}) + \text{R}''_2\text{NH}\cdot\text{HCl} + \text{CHCl}_3$, the
 following I being obtained (R, R', R'', R''' or R''R'''N, yield in %, b.p. in °C/mm
 or m.p. in °C, n_D^{20} , d_4^{20} being reported): Et, Pr, iso-Pr, H, 72.8, 78-80/1,
 1.4804, 0.9980; Et, Pr, Ph, H, 57.4, 118-120/2, 1.5532, 1.217; Et, Pr, NHPH,
 H, 73.6, 72-3, -, -; Et, Pr, Pr, Pr, 64, 88-91/1, -, (n_D^{23} 1.4760), -, Et, Pr,
 morpholino, 63.2, 101-2/1, 1.4997, 1.0976; Ph, Et, morpholino, 79.1, 75-6,
 -, -, Ph, Et, iso-Pr, H, 68, 108-9/0.8, 1.5495, 1.0924. The synthesized I
 are interesting as possible pesticidal agents.

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USSR

CHADAYEVA, N. A., MAMAKOV, K. A., and KAMAY, G. KH.

"Synthetic Method for Trialkoxysilylalkyl Esters of Trivalent Arsenic Thioacids"

USSR Author's Certificate No 368276, filed 22 Mar 71, published 73 (from Khimiya, No 20, Oct 73, Abstract No 20N514P)

Translation: Silicon-organic derivatives of trivalent As, exhibiting fungicidal properties, of the general formula $R_nAs[S(CH_2)_mSi(OR')_3]_{3-n}$ (I) (R = alkyl, aryl, heterocycle; R' = Me, Et; n = 0, 1, 2; m = 2, 3) are obtained by reacting alkyl esters of As³⁺ acids with trialkoxysilylalkylmercaptane under application of heat. Example. To 4 g EtAs(OEt)₂ 9.25 g HS(CH₂)₂Si(OEt)₃ is added with stirring, the mixture is brought to boiling point, EtOH formed is removed, the residue is kept in vacuum over a water bath. Quantitative yield of I -- 11.3 g -- is obtained (R=Et; R'=Et; m=2, n=1). Analogously other I were obtained (Rm R', m, n, yield in %, n_D²⁰, d₄²⁰, being reported); -, Et, 2, 0, 99.9, 1.4997, 1.1898; Ph, Me, 2, 1, 99.7, 1.5414, 1.2682; Ph, Et, 2, 1, 99.9, 1.5327, 1.2312; R_n = EtPh, Me, 2, 2, 99.6, 1.5470, 1.2453, R_n = EtPh, Et, 2, 2, 99.9, 1.5450, 1.2354. I is used in preparing covers protecting optical parts from microbiological growth.

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USSR

UDC 632.95

KHASANOV, A. S., TSAREV, S. G., KAMAY, G. Kh., AZERBAYEV, I. N., GABDULLINA, N. Z.

"Synthesis of New Chloral-Based Organophosphorus Insecticides"

Alma-Ata, Khimiya atsetilena i tekhnol. karbida kal'tsiya--sbornik (Chemistry of Acetylene and Technology of Calcium Carbide--collection of works), "Kazakhstan," 1972, pp 359-361 (from RZh-Khimiya, No 9, May 73, abstract No 9N476 by T. Ya. Ogibina)

Translation: Agricultural insecticides are synthesized -- ethyl α -naphthyl β, β -dichlorovinyl phosphate (I) and ethyl β -naphthyl β, β' -dichlorovinyl phosphate (II). Example. 0.228 mole of Cl_3CCHO diluted by an equal volume of ether is gradually added with agitation and cooling to -10°C to an ether solution of 0.228 mole of diethyl α -naphthyl phosphite. The mixture is kept for 1 hour at $\sim 20^\circ\text{C}$, the ether is driven off, the residue is distilled twice under vacuum giving compound I with a yield of 68% $\text{C}_{14}\text{H}_{13}\text{Cl}_2\text{O}_4\text{P}$, boiling point $150-1^\circ/0.12$, d_4^{20} 1.3370, n_{20D} 1.5648. In a similar procedure compound II is produced with a yield of 73.3% $\text{C}_{14}\text{H}_{13}\text{Cl}_2\text{O}_4\text{P}$, boiling point $161-3^\circ/0.1$, d_4^{20} 1.3395, n_{20D} 1.5030. Compounds I and II are insoluble in water, and dissolve readily in ether, acetone and other organic solvents.

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USSR

KHASANOV, A. S., et al., Khimiya atsetilena i tekhnol. karbida kal'tsiya -- sbornik, "Kazakhstan," 1972, pp 359-361

The insecticidal and toxic properties of the chemicals were studied as well as their myotic and anticholinesterase effect and their curative action when hypodermically injected in cattle. It is shown that the toxicity of I for warm-blooded animals is 1.5 times less than that of chlorophos, while that of II is two times less, while the larvicidal effect on midge larvae is ten times greater than that of chlorophos. The curative action of I in hypodermic injection of cattle was studied in 1.5 and 3% concentrations. The preparation was used externally in the form of an emulsion with OP-7 in a dose of 200 ml. The animals were treated in March. Compound II in this method of injection is used only in the form of a 3% emulsion with OP-7. Observations showed that I is 100% lethal and II is 98% lethal for ox bot larvae.

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USSR

UDC 541.63:543.422.25:547.879

SAMITOV, Yu. Yu., TAZEYEVA, N. K., CHADAYEVA, N. A., and KAMAY, G. Kh.
(deceased), Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov,
Academy of Sciences USSR, Kazan'

"The Configuration and Conformation of Substituted 1,3,2-Dioxarsenanes"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 4, Apr 73, pp 457-463

Abstract: On the basis of paramagnetic resonance spectra of high resolution, the configuration and conformation of ten 1,3,2-dioxarsenanes substituted in positions 2, 4, and 5 were studied. The data obtained indicated inversion of the screening constants of protons in positions 4, 6, and 5 and of methyls in position 5, an axial location of the bonds As-Cl and As-OR, an equatorial location of 4-Me, and a chair conformation of the six-membered heterocycle. The anisotropies of diamagnetic susceptibility ($\Delta\chi_{As-O} = 4.67 \times 10^{-6}$ and $\Delta\chi_{As-Cl} = -5.13 \times 10^{-6} \text{ cm}^3 \cdot \text{mole}^{-1}$ in the dipole approximation; $\Delta\chi_{As-O} = 0.9 \times 10^{-6}$ and $\Delta\chi_{As-Cl} = -6.8 \times 10^{-6} \text{ cm}^3 \cdot \text{mole}^{-1}$ in the non-dipole approximation) were estimated for the first time. By applying the R-factor method, a cyclic torsion angle $\psi = 58^\circ$ was found for 2-chloro-1,3,2-dioxarsenane. A study of the specific influence on the position of the resonance lines of the

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USSR

SAMITOV, Yu. Yu., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 4,
Apr 73, pp 457-463

aromatic solvent on transition from CCl_4 to PhH confirmed the conclusions made
on the conformation of the ring and of the substituents in it.

2/2

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USSR

UDC 547.341.07

KARRAFOVA, F. M., KAMAY, G. KH., YEFIMOVA, V. D., and FHI GABIYEVA, F. A.,
Kazan Chemical Technology Institute imeni S. M. Kirova

"Process for the Preparation of Methylchlorophosphines"

USSR Author's certificate No 362026, filed 24 Apr 70, published 13 Dec 72
(from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 2,
1973, p 55)

Translation: This process is based on tertiary phosphines and is improved
in that in order to strengthen the process, dichlorides of methylphosphonic
acid react with tertiary phosphines while being heated. The desired pro-
duct is subsequently separated by known methods. 2. The process in number
1 is improved in that it is carried out at temperatures between 175-190°C.
under a stream of inert gas, for example, carbon dioxide.

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USSR

UDC 547.241

KAMAY, G. V. (deceased), KHARRASOVA, F. M., ERRE, E. A., Kazan' Institute
of Chemical Technology imeni S. M. Kirov

"On Synthesis of Dialkyl-(Aryl)phosphinic and Thiophosphinic Acid Amides and
Alkyl-(Aryl)-phosphonic Acid Ester Amides"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1295-1299

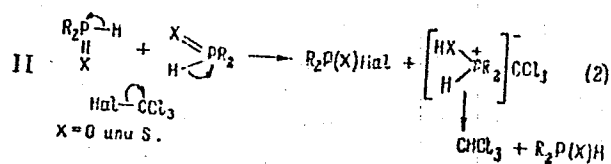
Abstract: Amides of dialkyl- and diarylphosphinic and thiophosphinic acids
and mixed ester amides of alkyl(aryl)phosphonic acids were synthesized in
order to study their pesticidal properties. Oxides and sulfides of secondary
phosphines, and also partial esters of alkyl and aryl phosphonous acids reacted
with amines in the presence of carbon tetrachloride to give amides of dialkyl-
(aryl)phosphinic and thiophosphinic acids, and amide esters of alkyl- and aryl-
phosphonic acids, respectively. It was found that sulfides of secondary phos-
phines react with carbon tetrachloride and trichlorobromomethane in the absence
of bases to form the corresponding dialkyl(aryl)-phosphinic acid halides.

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USSR

KAMAY, G. Kh. (deceased), et al., Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1295-1299



The resultant compounds are herbicides.

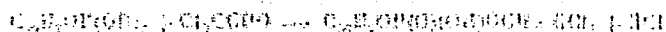
USSR

KHAY, G. K., KHASANOV, A. S., AZHAROV, I. M., GABDULLOV, N. Z.,
Institute of Chemical Sciences, Academy of Sciences of the Kazakh SSR

"Products of the Reaction of Chloral With Dialkyl Naphthyl Phosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(1974), No 6, Jun 72, pp 1300-1302

Abstract: Continuing their work on the synthesis of dialkyl naphthyl phosphites, the authors studied the reaction of dialkyl α -naphthyl and dialkyl β -naphthyl phosphites with chloral and studied the physiological activity of the resultant compounds. Chloral was added slowly to an ether solution of the phosphite. The reactions yielded alkyl naphthyl β , β' -dichlorovinyl phosphates and the corresponding alkyl chlorides.



The resultant products are colorless liquids which gradually hydrolyze in air. All the compounds are excellent insecticides with comparatively low toxicity for warm-blooded animals. Because of their low toxic properties and their curative effect in treatment of hypodermatosis of cattle, alkyl naphthyl β , β' -dichlorovinyl phosphates show promise for use in veterinary practice.

APPROVED FOR RELEASE: 07/20/2001

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CIA-RDP86-00513R002201210009-4"

USSR"

KAMAY, G. KH., ERRE, E. A., and KHARRASOVA, F. M.

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USSR

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USSR

UDC 632.95

KEASANOV, A. S., TSAREV, S. G., KAMAY, G. Kh., AZERBAYEV, I. N., GABDULLINA, N. Z.

"Synthesis of New Chloral-Based Organophosphorus Insecticides"

Alma-Ata, Khimiya atsetilena i tekhnol. karbida kal'tsiya---sbornik (Chemistry of Acetylene and Technology of Calcium Carbide---collection of works), "Kazakhstan," 1972, pp 359-361 (from RZh-Khimiya, No 9, May 73, abstract No 9N476 by T. Ya. Ogibina)

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USSR

KHASANOV, A. S., et al., Khimiya atsetilena i tekhnol. karbida kal'tsiya -- sbornik, "Kazakhstan," 1972, pp 359-361

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UDC 541.63:543.422.25:547.879

USSR

SAMITOV, Yu. Yu., TAZEYEVA, N. K., CHADAYEVA, N. A., and KAMAY, G. Kh.
(deceased), Institute of Organic and Physical Chemistry imeni A. Ye. Arbutov,
Academy of Sciences USSR, Kazan'

"The Configuration and Conformation of Substituted 1,3,2-Dioxaarsenanes"
Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 4, Apr 73, pp 457-463

Abstract: On the basis of paramagnetic resonance spectra of high resolution, the configuration and conformation of ten 1,3,2-dioxaarsenanes substituted in positions 2,4, and 5 were studied. The data obtained indicated inversion of the screening constants of protons in positions 4,6, and 5 and of methyls in position 5, an axial location of the bonds As-Cl and As-OR, an equatorial location of 4-Me, and a chair conformation of the six-membered heterocycle. The anisotropies of diamagnetic susceptibility ($\Delta\chi_{As-O} = 4.67 \times 10^{-6}$ and $\Delta\chi_{As-Cl} = -5.13 \times 10^{-6} \text{ cm}^3 \cdot \text{mole}^{-1}$ in the dipole approximation; $\Delta\chi_{As-O} = 0.9 \times 10^{-6}$ and $\Delta\chi_{As-Cl} = -6.8 \times 10^{-6} \text{ cm}^3 \cdot \text{mole}^{-1}$ in the non-dipole approximation) were estimated for the first time. By applying the R-factor method, a cyclic torsion angle $\psi = 58^\circ$ was found for 2-chloro-1,3,2-dioxaarsenane. A study of the specific influence on the position of the resonance lines of the

USSR

SAMITOV, Yu. Yu., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 4,
Apr 73, pp 457-463

aromatic solvent on transition from CCl_4 to PhH confirmed the conclusions made
on the conformation of the ring and of the substituents in it.

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UDC 547.341.07

USSR

KARRAFOVA, F. M., KAMAY, G. KH., YEFIMOVA, V. D., and FHI GABIYEVA, F. A.,
Kazan Chemical Technology Institute imeni S. M. Kirova

"Process for the Preparation of Methylchlorophosphines"

USSR Author's certificate No 362026, filed 24 Apr 70, published 13 Dec 72
(from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 2,
1973, p 55)

Translation: This process is based on tertiary phosphines and is improved
in that in order to strengthen the process, dichlorides of methylphosphonic
acid react with tertiary phosphines while being heated. The desired pro-
duct is subsequently separated by known methods. 2. The process in number
1 is improved in that it is carried out at temperatures between 175-190°C.
under a stream of inert gas, for example: carbon dioxide.

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USSR

UDC 547.241

KAMAY, G. M. (deceased), KHARRASOVA, F. M., ERNE, E. A., Kazan' Institute
of Chemical Technology imeni S. M. Kirov

"On Synthesis of Dialkyl-(Aryl)phosphinic and Thiophosphinic Acid Amides and
Alkyl-(Aryl)-phosphonic Acid Ester Amides"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1295-1299

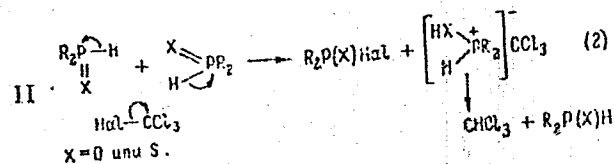
Abstract: Amides of dialkyl- and diarylphosphinic and thiophosphinic acids
and mixed ester amides of alkyl(aryl)phosphonic acids were synthesized in
order to study their pesticidal properties. Oxides and sulfides of secondary
phosphines, and also partial esters of alkyl and aryl phosphonous acids reacted
with amines in the presence of carbon tetrachloride to give amides of dialkyl-
(aryl)phosphinic and thiophosphinic acids, and amide esters of secondary phos-
phonic acids, respectively. It was found that sulfides of secondary phos-
phines react with carbon tetrachloride and trichlorobromomethane in the absence
of bases to form the corresponding dialkyl(aryl)-phosphinic acid halides.

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USSR

KAMAY, G. Kh. (deceased), et al., Zhurnal Obshchey Khimii, Vol 42(104), No 6,
Jun 72, pp 1295-1299



The resultant compounds are herbicides.

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UDC: 547.241+547.653

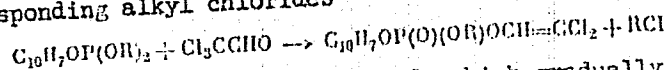
USSR

KAMAY, G. Kh., KHASANOV, A. S., AZERBAYEV, I. N., GABDULLINA, N. Z.,
Institute of Chemical Sciences, Academy of Sciences of the Kazakh SSR

"Products of the Reaction of Chloral With Dialkyl Naphthyl Phosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1300-1302

Abstract: Continuing their work on the synthesis of dialkyl naphthyl phosphites, the authors studied the reaction of dialkyl α -naphthyl and dialkyl β -naphthyl phosphites with chloral and studied the physiological activity of the resultant compounds. Chloral was added slowly to an ether solution of the phosphite. The reactions yielded alkyl naphthyl β, β' -dichlorovinyl phosphates and the corresponding alkyl chlorides



The resultant products are colorless liquids which gradually hydrolyze in air. All the compounds are excellent insecticides with comparatively low toxicity for warm-blooded animals. Because of their low toxic properties and their curative effect in treatment of hypodermatosis of cattle, alkyl naphthyl β, β' -dichlorovinyl phosphates show promise for use in veterinary practice.

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UDC 542.945+542.957.2+547.852.7

USSR

KAMAY, G. Kh. [decd.], CHERNOKAL'SKIY, B. D., GAVRILOV, V. I., TSENTOVSKIY, V. M., and TSENTOVSKAYA, V. S.; Kazan' Chemico-technological Institute imeni S. M. Kirov

"Quantitative Separation of the Combined Effect of the Substituent in Para-Substituted 10-Aryl-5,10-Dihydrophenarsazine Oxides"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 8, No 3, 1972, pp 400-402

Abstract: Quantitative evaluation was carried out of the transmission of the effect of the substituent, through the induction and polar conjugation effects, in para-substituted 10-phenyl-5,10-dihydrophenarsazine oxides (I), on the protonation of oxygen at the arsenic atom. By solving the equation correlating the basicity of I with σ^0 and σ_R^+ constants of substituents it was shown that the transmission of the effect of the substituent is effected mainly by the induction effect, with a certain direct polar conjugation of the substituent and the reaction center in the system (X) —  — As → (O).

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USSR

UDC 542.945.542.957.2+547.852.7

KAWAY, G. KH. (DECEASED), GAVRILOV, GAVRILOV, V. I., CHERNOKAL'SKIY, B. D.,
Kazan Institute of Chemical Technology imeni S. M. Kirov

"Basicity of Para-Substituted 10-Aryl 5, 10-Dihydrophenarsazine Oxides"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul. 72, pp 1530-1534

Abstract: The ionization constants of seven para-substituted 10-aryl-5,10-dihydrophenarsazine oxides, and their relation to the Hammett sigma constants of the substituents were determined. It was shown that when acid acts on 10-p-dimethylaminophenyl-5,10-dihydrophenarsazine oxide in an alcohol-water medium, the As \rightarrow O is protonated first, followed by the nitrogen in the dimethylamino group. 10-p-Fluorophenyl-5,10-dihydrophenarsazine and its oxide were synthesized for the first time.

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- 32 -

UDC 547.476.053

USSR

NURTDINOV, S. Kh., ISMAGILOVA, N. M., ZYKOVA, T. V., SALAKHODINOV, R. A.,
TSIVUNIN, V. S., and KAMAY, G. Kh., Kazan' Chemico-Technological Institute
imeni S. M. Kirov

"Reaction of Alkyldichlorophosphines With Chlorides of Carboxylic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,486-2,490

Abstract: The reactions of phosphines and other phosphorus derivatives with various acids and acid derivatives have been studied, but no information on alkyldichlorophosphines has thus far been published. The authors studied six members of this group in reactions with acyl chlorides of carboxylic acids. Products in the case of acetyl and benzoyl chlorides, following treatment with the adducts with alcohols, consisted of the esters of the alkylketo-phosphinic acids; in the case of di- and trichloroacetyl chlorides, they consisted of vinyl esters of pentavalent phosphorus acids. Procedural details of tests and physical constants of end-products are given.

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UDC 547.241

USSR

NURDYINGV, S. KH., KHAYRULLIN, R. S., BURMAKINA, T. V., ZIKOVA, T. V.,
SALAKHUTDINGV, R. A., TSIVUNIN, V. S., and KANAY, G. KH. (DECEASED), Kazan,
Institute of Chemical Technology

"Reaction of Aryldichlorophosphines with Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 3, Aug 71, pp 1685-1688

Abstract: Continuing their study of the condensation of primary chloro-phosphines with ketones, the authors investigated the reaction of phenyl- and tolyldichlorophosphine with saturated ketones. It was found that these components react on heating for 10-20 hours at 90-130° to give cyclic oxaphospholenes, which react with alcohols to give corresponding esters of aryl- β -ketophosphinic acids. IR, NMR, and PMR spectroscopy methods were used to study the mechanism of the interaction of arylidichlorophosphines with ketones. The results confirm that at one of the stages of the reaction β -ketophosphinic acid chlorides are formed.

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UDC 547.241.284

USSR

NURTDINOV, S. KH., KHAYRULLIN, R. S., ZYKOVA, T. V., TSIVUNIN, V. S., KAMAY, G. SH. (deceased), Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Reaction of Diethylchlorophosphine With Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971, pp 2158-2162

Abstract: Continuing their studies of chlorophosphine reactions with saturated ketones, the authors synthesized a series of tertiary phosphine oxides by heating (at 100-110°) chlorodiethylphosphine with aliphatic ketones or acetophenone. The chemical structure of the products was confirmed by their IR and NMR spectra and conversion to some other compounds. α -Chloroisopropyl-diethylphosphine oxide when treated with alcoholic alkali or acetic anhydride yielded diethylisopropenylphosphine oxide or α -acetoxyisopropyl-diethylphosphine oxide. Diethyl- α -phenylvinylphosphine oxide with alcoholic alkali gave sodium dialkylphosphinate. The elemental analysis data and physical constants of the synthesized compounds are given.

- 57 -

USSR

UDC: 547.341

FRIDLAND, S. V., ZYKOVA, T. V., CHIRKUNOVA, S. K., KATAYEVA, V. A. and
KAMAY, G. Kh. (deceased), Kazan Chemical-Technological Institute imeni
S. M. Kirov

"Reaction of Phosphorus Pentachloride with 2-Methyl-1,3-dioxycyclopentanes. II"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 1041-1044;

Abstract: On the basis of NMR spectra, it was established that the reactions of phosphorus pentachloride with 2-methyldioxolan, 2,4-dimethyl-dioxolan and β -chloroethylvinyl ether are stereospecific. The acid dichloride of β -(β -chloroalkoxy)vinylphosphonic acid is formed only as the trans-isomer. This acid dichloride was further treated with alcohols to form a series of esters, the physical constants of which are presented in the article.

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- 59 -

UDC 547.26'118

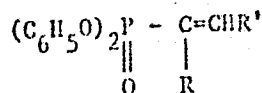
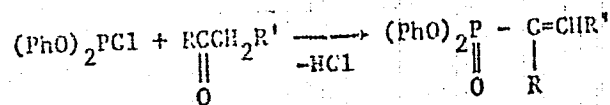
USSR-

NURTDINOV, S. KH., KHAYRULLIN, R. S., TSIVUNIN, V. S., ZYKOVA, T. V., KAMAY, G. KH.

"Interaction of Diarylchlorophosphites with Saturated Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 123-125

Abstract: It was demonstrated earlier [S. Kh. Nurtidinov, et al., USSR Author's Certificate No 249366, Byull. Izobr., No 25, 1969; ZhOKh, No 40, 36, 1970; ZhOKh, No 40, 2377, 1970] that halogenophosphines react comparatively smoothly with saturated ketones with the formation of cyclic oxaphospholenes. As a continuation of this research, a study was made of the reaction of diphenylchlorophosphite with acetone, methylethyl, methylpropyl, methylbutylketone and acetophenone. The indicated components react with heating to 100-160° for 10-20 hours with the formation of the vinyl derivatives of pentavalent phosphorus:

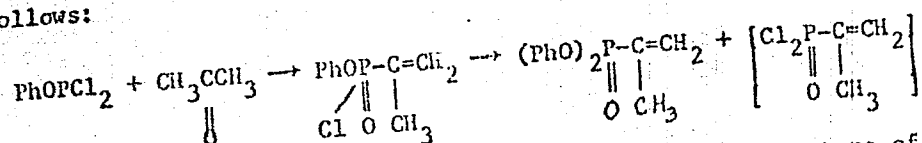


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USSR

NURTDINOV, S. KH., et al., Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 123-125

The primary aryldichlorophosphites react with saturated ketones as follows:



Infrared spectra are presented confirming the structure of the diphenyl esters of butene-γ-phosphonic-1 acid and α-phenylvinylphosphonic acid. The paramagnetic resonance spectrum is presented for the diphenyl ester of propenylphosphonic-2 acid.

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- 31 -

UDC 547.341

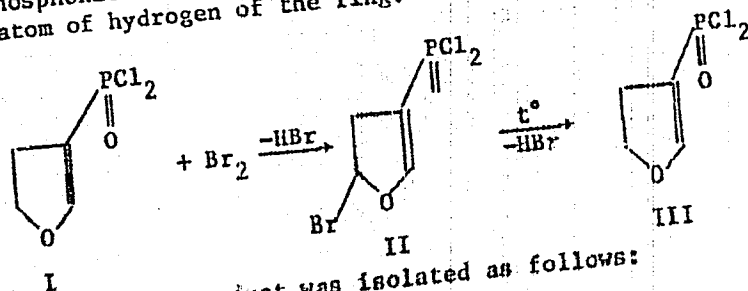
USSR

FRIDLAND, S. V., SHOSTAK, V. P., ~~KAMAY, G. KH.~~

"Interaction of Vinylphosphonates with Bromine"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 121-123

Abstract: A study was made of the bromination of the acid dichloride of dihydrofuranephosphonic acid as a substitution reaction with respect to the most mobile atom of hydrogen of the ring. The process is described as follows:

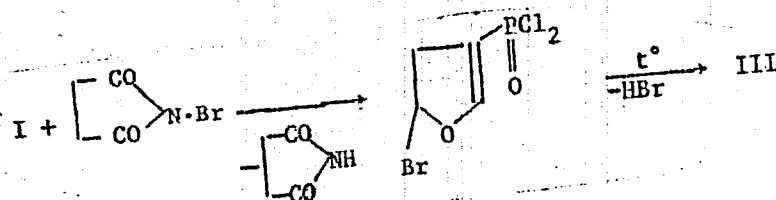


The intermediate product was isolated as follows:

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USSR

FRIDLAND, S. V., Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 121-123



This process is an indirect confirmation of occurrence of the interaction of the acid dichloride (I) with bromine by the scheme with substitution of the most mobile hydrogen atom. Experimental procedures, yields and physical characteristics are presented for obtaining the acid dichloride of furan-3-phosphonic acid and a number of its esters.

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- 32 -

USSR

UDC 547.476.053

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USSR

KAMAY, G. Kh. (DECEASED), SAVITLOV, SAVITLOV, V. I., SHCHERBINA, E. L.,
Kazan' Institute of Chemical Technology Imeni S. M. Kirov

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USSR

UDC 547.241

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UDC: 547.341

FRIDLAND, S. V., ZYKOVA, T. V., CHIRKUNOVA, S. K., KATAYEVA, V. A. and
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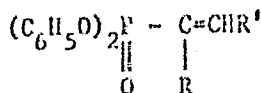
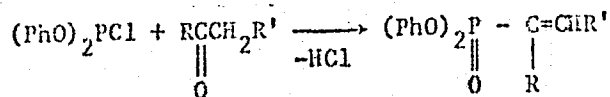
UDC 547.26'118

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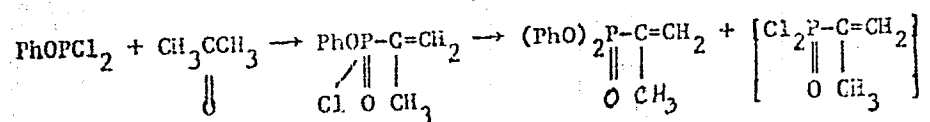


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USSR

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USSR

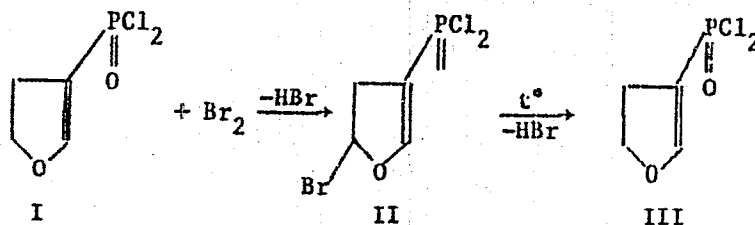
UDC 547.341

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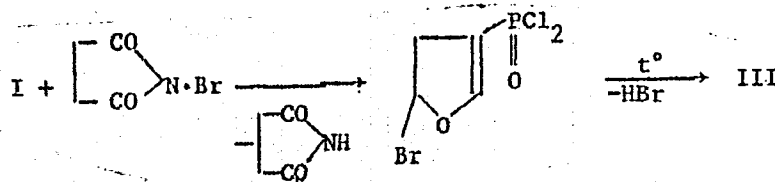


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USSR

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USSR

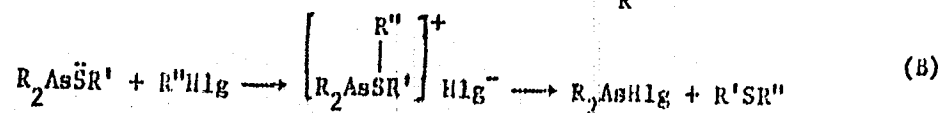
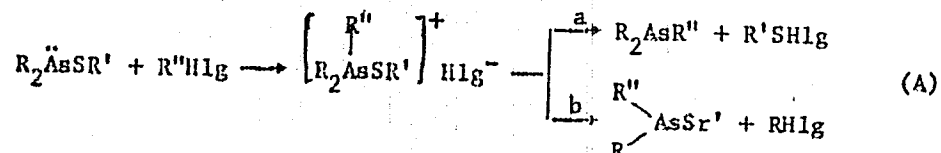
UDC 547.242

CHADAYEVA, N. A., KANAY, G. KH., MAMAKOV, K. A., OSIPOVA, M. P.

"Interaction of Thioacid Esters of Trivalent Arsenic with Alkyl Halides"

Leningrad, Zhurnal Obshchey khimii, Vol XLII (CIV), No 1, 1972, pp 125-129

Abstract: A study was made of the interaction of thioacid esters of trivalent arsenic with alkyl halides to discover the mechanism of this reaction. The explanation is based on the following representation:



The reaction conditions, analytical data and physical constants of some of the products are tabulated. The interaction of thioacid esters of trivalent arsenic with alkyl halides leads to breaking of the AsS bonds with the formation

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USSR

CHADAYEVA, N. A., et al., Zhurnal Obshchey khimii, Vol XLII (CIV), No 1, 1972, pp 125-129

of the corresponding halogenoarsines and sulfur-containing compounds.

Experimental procedures, physical properties and yields are presented for three of these compounds.

2/2

Organometallic Compounds

USSR

UDC 547.26.119

KAMAY, G. KH., UGULAVA, M. M., GIGAURI, R. D., INDZHIYA, M. A.,
CHACHAVA, G. N., Tbilisi State University

"Some Esters of Arsenous Acid"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 61,
No 1, Jan 71, pp 61-64

Abstract: The authors studied the reaction of some secondary alcohols and arsenic trioxide, as well as properties of the resultant esters. Heating of an arsenic trioxide suspension in an alcohol-octane mixture gives tri-sec.-alkyl arsenites. The latter react with acetic anhydride to give dialkoxyarsinoacetates and two esters of acetic acid. Tri-sec.-alkyl arsenites react with acetyl chloride to give acid chlorides of di-sec.-alkylarsenous acid. The article lists properties of the resultant compounds.

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USSR

UDC 546.26.119

~~KAMAY, G. Kh.~~ (deceased), ABALONIN, B. Ye., CHERNOKAL'SKIY, B. D., IZOSIMOVA, S. V., and SHAGIDULLIN, R. R., Kazan' Chemical Technological Institute imeni S. M. Kirov, and Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Acad. Sc. USSR

"Reaction of bis-(Dialkylarsine)-oxides With Alkyl Iodides"

Izvestiya VUZ -- Khimiya i Khimicheskaya Tekhnologiya, Vol 14, No 5, 1971, pp 724-727

Abstract: Bis-diethylarsine)-oxide reacts energetically with benzoic and acetic acyl chlorides yielding in the first case a mixed anhydride of diethylarsinous and benzoic acids, the products of the second reaction being inseparable. Reaction of bis-(diethylarsine)-oxide with alkyl halides is more complex: with ethyl iodide a crystalline product is obtained from which a careful workup yields tetraethylarsonium iodide, ethyl ester of diethylarsinous acid and diethyliodoarsenic. Diethyliodoarsenic in turn can react with ethyliodide yielding triethylarsine diiodide. Reactions with methyl iodide are so vigorous that a solvent is recommended. Diphenylarsine oxide, however, even after heating for 2 hrs to 100° was recovered unchanged.

1/1

Organometallic Compounds

USSR

UDC 547.26.119

KAMAY, G. Kh., UGULAVA, M. M., GIGAURI, R. D., INDZHIYA, M. A., CHACHABA, G. N., Tbilisi State University

"Concerning Some Esters of Arsenous Acid"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 61, No 1, 1971, pp 61-64

Abstract: The tri-sec-alkyl esters of arsenous acid, as prepared from arsenous acid anhydride and secondary alcohols, were investigated. A suspension of a arsenous acid anhydride in a mixture of the secondary alcohol in n-octane was heated. The resulting tri-sec-alkylarsenites then react with acetic acid anhydride to form dialkoxyarsinoacetates. Tri-sec-alkylarsenites also react with acetyl chloride. Di-sec-alkoxy-arsinoacetates and especially di-sec-alkylarsinous acid chloride are vesicants. The physical constants of eight compounds are presented.

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